

## APPENDIX

# H Tiebacks, Tiedowns, and Soil Nails

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## **Tiebacks – Specific Project**

A retaining wall, incorporating tiebacks and Cast-In-Drilled Hole (CIDH) concrete piles, was constructed near the Route 805/163 interchange in San Diego in order to protect the foundation of a multistory apartment house. One wall of the apartment house was located about 4 to 6 feet from the retaining wall layout line and about 20 feet above the new street grade in front of the retaining wall.

The Contractor first excavated approximately 5 feet below original ground and then drilled the holes for the tiebacks. The tiebacks were approximately 30 feet in length and were drilled at an angle of 30 from the horizontal. Next came the drilling of the 60 inch diameter CIDH piles on 10 foot centers. The tieback anchors were then placed and the bottom 15 feet were grouted. The CIDH piles were cast in full section to the elevation of the bottom of the retaining wall. The Contractor then dropped a form down in the hole and cast the top portion (20 feet) in approximately a half section.

After the grout and concrete had reached the required strength, the rods were stressed and left ungrouted for 7 days so they could be tested for residual stress. They were then grouted and the remaining street excavation completed (15 feet). A retaining wall was then constructed with the half section of the CIDH pile cast in with the wall section.

The pile spacing and the pile half section were designed to provide temporary support for the vertical face of the excavation during construction of the retaining wall.